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09/428,679	10/27/1999	ADAM L. SELIGMAN	P98-1866	4978

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EXAMINER

WALLACE, SCOTT A

ART UNIT PAPER NUMBER

2671

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/428,679

Applicant(s)

SELIGMAN, ADAM L.

Examiner

Scott Wallace

Art Unit

2671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6,7,9-12,15-18,20 and 22-36 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

- 5) ☐ Claim(s) _____ is/are allowed.

- 6) ☒ Claim(s) 6,7,9-12,15-18,20 and 22-36 is/are rejected.

- 7) ☐ Claim(s) _____ is/are objected to.

- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.

- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)

- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.

- 5) ☐ Notice of Informal Patent Application (PTO-152)

- 6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments with respect to claims 6,7, 9-12, 15-18, 20, 22-36 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicants argument that there is no motivation to combine Grimaud and Hoppe because Grimaud doesn't teach using a plurality of computers and Grimaud doesn't teach using 3D meshes. After further review, examiner feels there is no motivation to combine Grimaud and Hoppe. However, after an update search, examiner feels that there is motivation to combine Freedman et al and Hoppe as seen below.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 12, 15, 17-18, 20, 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Freedman et al., U.S. Patent No. 5,675,721.

3. As per claims 12 and 17, Freedman et al discloses a computer system for rendering a three dimensional scene (column 1 lines 5-10), comprising: a visualization console including a graphics processor and a display (fig 3); a plurality of workstations, connected to the visualization console by a high speed network to enable the visualization console and the plurality of workstations to operate together (fig 3); each of the plurality of workstations storing three dimensional objects, the stored three dimensional objects collectively representing a three dimensional scene (column 5 lines 25-50); and the

visualization console storing identifiers of each of the three dimensional objects stored at the plurality of workstations (column 5 lines 25-50); wherein the visualization console is operable under user control to communicate requests to the plurality of workstations over the high speed network, said request including identifiers of selected ones of the three dimensional objects stored at the workstations representing a selected view of the three dimensional scene (column 5 lines 25-50); the workstations are responsive to received requests to operate in parallel to create LOD representations of the respective stored three dimensional objects identified by the requests received from the visualization console and to communicate the LOD representations of the selected three dimensional objects in parallel to the visualization console for rendering by the visualization console graphics processor to create a composite image display representation by the visualization console display of the selected view of the three dimensional scene (column 7 lines 35-50).

4. As per claim 15, Freedman et al discloses wherein the request include a specified level of detail for the LOD representations of the selected three dimensional objects to be created by the workstations (column 7 lines 35-50).

5. As per claim 18, Freedman et al discloses wherein the visualization console includes means for distributing said three dimensional objects for storage at the plurality of workstations over the high speed network (column 5 lines 25-50).

6. As per claim 20, Freedman et al discloses wherein the request include a specified level of detail for the LOD representations to be created from the three dimensional objects stored at the workstations (column 7 lines 35-50).

7. As per claim 22, Freedman et al discloses means for receiving an input from a user on the first computer column 5 lines 25-50); means for processing the input to determine a first three dimensional scene that corresponds with the input (column 5 lines 25-50); and means for receiving subsequent inputs from the user and processing the inputs to determine subsequent three dimensional scenes that correspond with the subsequent inputs, wherein the user interactively controls the display of the subsequent three dimensional scenes by subsequent inputs (column 5 lines 25-50).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 6-7, 9-11, 16, 23-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freedman et al., U.S. Patent No. 5,675,721 in view of Hoppe, U.S. Patent No. 5,963,209.

10. As per claim 6, Freedman et al discloses a method for utilizing a network of computers to render a three dimensional scene (column 1 lines 5-10), comprising: sending a plurality of request from a first computer to a plurality of other computers over a high speed network (column 5 lines 25-50), the plurality of other computers each storing high resolution three dimensional (column 1 lines 5-15) scene objects (column 5 lines 25-50), wherein the request identify selected three dimensional objects stored at the plurality of other computers (column 5 lines 25-50); operating the plurality of other computers in parallel to create respective LOD representations of the selected three dimensional objects stored at the other computers (column 7 lines 35-50); communicating the respective LOD representations of the selected three dimensional objects from the plurality of other computers in parallel over the network to the first computer (column 5 lines 25-50 and column 7 lines 35-50), and processing the received LOD representations in a graphics rendering pipeline in the first computer to create a display image of a three dimensional scene (column 7 lines 35-50). However, Freedman et al does not specifically mention mesh, this is disclosed in Hoppe in column 17 lines 33-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the mesh of Hoppe with the system of Freedman et al

because models in computer graphics are often represented using triangle meshes because it is easier to associate attributes with it (column 1 lines 20-25 and lines 55-60).

11. As per claim 7, Freedman et al discloses initially distributing the high resolution three dimensional objects from the first computer for storage by the plurality of other computers; and associating identifiers with the three dimensional objects (column 5 lines 25-50).

12. As per claim 9, Freedman et al discloses wherein the requests include a specified level of detail for creation of the LOD mesh representations from the stored high resolution three dimensional objects (column 7 lines 35-50).

13. As per claim 10, Freedman et al discloses wherein the creating step includes creating LOD representations of the three dimensional objects with the specified level of detail as contained in the requests (column 7 lines 35-50).

14. As per claim 11, Freedman et al discloses receiving an input from a user on the first computer column 5 lines 25-50); processing the input to determine a first three dimensional scene that corresponds with the input (column 5 lines 25-50); and receiving subsequent inputs from the user and processing the inputs to determine subsequent three dimensional scenes that correspond with the subsequent inputs, wherein the user interactively controls the display of the subsequent three dimensional scenes by subsequent inputs (column 5 lines 25-50).

15. As per claim 16, Freedman et al does not disclose wherein the workstations create meshes comprising LOD representations of the three dimensional objects with the specified level of detail as contained in the requests. However, this is disclosed in Hoppe in column 17 lines 33-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the mesh of Hoppe with the system of Freedman et al because models in computer graphics are often represented using triangle meshes because it is easier to associate attributes with it (column 1 lines 20-25 and lines 55-60).

17. As per claims 23, 28, 31, 32 and 33, Freedman et al discloses a method of displaying a three dimensional scene image, comprising: from a first computer coupled to a display (fig 3), transmitting a retrieval request to each of a plurality of second computers storing three dimensional scene objects distributively stored at said second computers together with associated identifiers (column 5 lines 25-50 and column 7 lines 35-50), said stored three dimensional scene objects collectively representing a three dimensional scene, said retrieval request including identifiers associated with stored scene objects representing at least a portion of the three dimensional scene selected for display (column 7 lines 35-50); the second computers retrieving and processing in parallel three dimensional scene objects-stored at individual ones of the computers based on matches between three dimensional scene object identifiers in the received request and three dimensional scene objects stored at the second computers (column 5 lines 25-50); the second computers communicating the processed three dimensional scene object in parallel to a graphics rendering pipeline processor in the first computer to render and create a display a representation of the selected portion of the three dimensional scene assembled from the three dimensional scene object communicated by the plurality of second computers to the first computer (column 5 lines 25-50). However, Freedman et al does not specifically mention mesh, this is disclosed in Hoppe in column 17 lines 33-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the mesh of Hoppe with the system of Freedman et al because models in computer graphics are often represented using triangle meshes because it is easier to associate attributes with it (column 1 lines 20-25 and lines 55-60).

18. As per claims 24, 29 and 34, Freedman et al discloses wherein each three dimensional scene object identifier includes the location of that object in the three dimensional scene (column 7 lines 35-50).

19. As per claims 25, 29 and 35, Freedman et al discloses wherein the three dimensional scene objects stored at the second computers include information concerning one or more of geometry, color and texture of the object (column 5 lines 25-50).

20. As per claims 26, 30 and 36, Freedman et al discloses wherein the stored three dimensional scene objects are distributed in a predetermined manner amongst the plurality of second computers (column 5 lines 25-50).

21. As per claims 27 and 30, Hoppe discloses wherein the three dimensional scene objects are stored at the second computers as high resolution models, and the processing carried out by the second computers creates respective meshes of the retrieved three dimensional scene objects at a selected level of resolution (column 17 lines 33-65).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Scott Wallace** whose telephone number is **703-605-5163**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at 703-305-9798.

Any response to this action should be mailed to:


Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.


MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

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